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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,508	07/10/2001	Steven J. Maas	P30296US	7387

7590 07/07/2004

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EXAMINER	
PHAN, HANH	

ART UNIT	PAPER NUMBER
2633	9

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/902,508	Applicant(s) MAAS, STEVEN J.	
	Examiner Hanh Phan	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4, 6, 7*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 12-15 and 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Fatehi (US Patent No. 6,122,095) cited by applicant.

Regarding claims 1, 12 and 21, referring to Figure 3, Fatehi discloses an apparatus for separating signals from a wavelength multiplexed signal, the apparatus comprising:

an optical circulator (i.e., optical circulator 310, Fig. 3) having a first port (i.e., input port of optical circulator 310, Fig. 3) positioned and arrannged to receive the wavelength multiplexed signal, a second port (i.e., second port 312 of optical circulator 310, Fig. 3) positioned and arranged to output the wavelength multiplexed signal, and a third port (i.e., third port 313 of optical circulator 310, Fig. 3) positioned and arranged to output signals input at the second port;

an optical pump (i.e., optical pump 360, Fig. 3) optically coupled to the second port (i.e., second port 312 of optical circulator 310, Fig. 3);

a fiber amplifier (i.e., fiber amplifier EDF 340, Fig. 3) optically coupled to the optical pump (i.e., optical pump 360, Fig. 3); and

a spectrally selective reflecting grating (i.e., a spectrally selective reflecting grating 330, Fig. 3) optically coupled to the fiber amplifier (i.e., fiber amplifier EDF 340, Fig. 3)(see col. 6, lines 15-46).

Regarding claims 2, 14 and 23, Fatehi further teaches the fiber amplifier (i.e., fiber amplifier EDF 340, Fig. 3) comprises an erbium doped fiber amplifier.

Regarding claims 3, 13 and 22, Fatehi further teaches the optical pump further comprises the erbium doped fiber amplifier (Fig. 3).

Regarding claims 4, 15 and 24, Fatehi further teaches the spectrally selective reflecting grating (i.e., a spectrally selective reflecting grating 330, Fig. 3) is a fiber Bragg grating.

Regarding claim 5, Fatehi further teaches the fiber Bragg grating is integrally built in with the fiber amplifier (Fig. 3).

3. Claims 6-11, 16-20 and 25-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Huber (US Patent No. 6,094,284).

Regarding claims 6, 16, 25 and 30, referring to Figure 4, Huber discloses an apparatus for separating signals from a wavelength multiplexed signal, the apparatus comprising:

an optical circulator (i.e., optical circulator 24, Fig. 4) having a first port (i.e., first port 4 of optical circulator 24, Fig. 4) positioned and arranged to receive an optical pump

input (i.e., pump laser 20, Fig. 4), a second port (i.e., second port 1 of optical circulator 24, Fig. 4) positioned and arranged to output signal received from the first port and to receive the wavelength multiplexed signal (i.e., input signal) through a fiber amplifier (i.e., erbium fiber 16), a third port (i.e., third port 2 of optical circulator 24, Fig. 4) positioned and arranged to output signals input at the second port and receiving input signals, and a fourth port (i.e., fourth port 3 of optical circulator 24, Fig. 4) positioned and arranged to output signals input at the third port;

an optical pump (i.e., laser pump 20, Fig. 4) optically coupled to the first port;

the fiber amplifier (i.e., erbium fiber 16, Fig. 4) optically coupled to the second port; and

a spectrally selective reflecting grating (i.e., a spectrally selective reflecting grating 56, 58, 60, 64, Fig. 4) optically coupled to the third port.

Regarding claims 7, 17, 19 and 28, Huber further teaches the optical pump is optically coupled to the first port (Fig. 4).

Regarding claims 26 and 32, Huber further teaches the amplifying the wavelength multiplexed signal comprises optical pumping the wavelength multiplexed signal in a doped fiber amplifier attached to the second port (Fig. 4).

Regarding claims 8, 18, 27 and 31, Huber further teaches the fiber amplifier is an erbium doped fiber amplifier (Fig. 4).

Regarding claim 9, Huber further teaches the erbium doped fiber amplifier is integrally built in at the second port (Fig. 4).

Regarding claims 10, 20, 29 and 33, Huber further teaches the spectrally selective reflecting grating is a fiber Bragg grating (Fig. 4).

Regarding claims 11 and 34, Huber further teaches the fiber Bragg grating is integrally built in at the third port (Fig. 4).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 35-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huber (US Patent No. 6,094,284) in view of Epworth et al (US Patent No. 5,608,571 cited by applicant).

Regarding claims 35, 40, 41, 45, 46, 50, 51, 55 and 56, Huber teaches all the aspects of the claimed invention as set forth in the rejection to claim 6 above except fails to teach a third port positioned and arranged to output signals input at the second port and receive input signals and a fiber amplifier optically coupled to the third port. However, Figure 2 of Huber teaches a third port positioned and arranged to output signals input at the second port and receive input signals (col. 4, lines 7-24) and Epworth teaches a fiber amplifier (i.e., fiber amplifier 55, Fig. 5) optically coupled to the third port (col. 4, lines 2-24). Therefore, it would have been obvious to one having skill in the art at the time invention was made to incorporate the third port positioned and

arranged to output signals input at the second port and receive input signals and a fiber amplifier optically coupled to the third port as taught by Figure 2 of Huber and Epworth in the Figure 4 of Huber. One of ordinary skill in the art would have been motivated to do this since Huber suggests in column 4, lines 7-24 and Epworth suggests in column 4, lines 2-24 that using such a third port positioned and arranged to output signals input at the second port and receive input signals and using a fiber amplifier optically coupled to the third port have advantage of allowing combining the individual signals into the multiplexed signal and amplifying the signal to a desired level.

Regarding claim 36, Huber further teaches the optical pump is optically coupled to the first port (Fig. 4).

Regarding claims 37, 42, 47, 52 and 57, Huber further teaches the fiber amplifier is an erbium doped fiber amplifier (Fig. 4).

Regarding claim 38, the combination of Huber and Epworth teaches the erbium doped fiber amplifier is integrally built in at the third port (Figs. 2 and 4 of Huber and Fig. 5 of Epworth).

Regarding claims 39, 43, 44, 48, 49, 53, 54, 58 and 59, Huber further teaches the first spectrally selective reflecting grating and the second spectrally selective reflecting grating are fiber Bragg gratings (Fig. 2 of Huber).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lauzon et al (US Patent No. 5,978,131) discloses in fiber two stage amplifier.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

Hanh Phan

06/25/2004